IN THE CLAIMS

Please amend the claims as follows:

Claims 1-43 (Cancelled)

44. (New) A semiconductor structure comprising:

a monocrystalline substrate;

an amorphous oxide layer formed on the substrate and comprising at least one material selected from the group consisting of $Sr_zBa_{1-z}TiO_3$, $Sr_zBa_{1-z}ZrO_3$, $Sr_zBa_{1-z}HfO_3$, $Sr_zBa_{1-z}SnO_3$ and $CaTiO_3$, where z ranges from 0 to approximately 1; and

a first monocrystalline nitride material layer having a thickness in the range of from about 20 angstroms to about 50 angstroms overlying the amorphous oxide layer and comprising at least one material selected from the group consisting of GaN, GaInN, AlGaN, SiN and AlN.

45. (New) The semiconductor structure of claim 44, wherein the amorophous oxide layer comprises an oxide formed as a monocrystalline oxide and subsequently heat treated to convert the monocrystalline oxide to an amorphous oxide.

46. (New) The semiconductor structure of claim 44, wherein the first monocrystalline nitride material layer is formed by nitridation of a first monocrystalline material layer selected from the group consisting of GaAs, GaInAs, AlGaAs, Si and AlAs.

47. (New) The semiconductor structure of claim 44, wherein the substrate comprises silicon.

48. (New) The semiconductor structure of claim 44, further comprising a monocrystalline material layer formed overlying the amorphous oxide layer and underlying the first monocrystalline nitride material layer.

49. (New) The semiconductor structure of claim 44, further comprising a template layer positioned between the amorphous oxide layer and the monocrystalline nitride material layer.

50. (New) The semiconductor structure of claim 49, wherein the template layer comprises at least one material selected from the group consisting of Ti-As, Sr-O-As, Sr-Ga-O, Ti-O-As, and Sr-Al-O.

51. (New) The semiconductor structure of claim 49, wherein the template layer comprises a Zintl-type phase material.

52. (New) The semiconductor structure of Claim 51, wherein the Zintl-type phase material comprises at least one of $SrAl_2$, $SrAl_4$ $(MgCaYb)Ga_2$, (Ca, Sr, Eu, Yb)In_2, $BaGe_2As$, and $SrSn_2As_2$.

53. (New) The semiconductor structure of claim 49, wherein the template layer comprises a surfactant material.

54. (New) The semiconductor structure of claim 53, wherein the surfactant material comprises at least one of Al, In, and Ga.

55. (New) The semiconductor structure of claim 53, wherein the template layer further comprises a capping layer.

56. (New) The semiconductor structure of claim 55, wherein the capping layer is formed by exposing the surfactant material to a cap-inducing material.

57. (New) The semiconductor structure of claim 56, wherein the cap-inducing material comprises at least one of As, P, Sb, and N.

58. (New) The semiconductor structure of claim 55, wherein the surfactant comprises Al, and the capping layer comprises Al_2Sr.

59. (New) The semiconductor structure of claim 44, wherein the amorphous oxide layer formed on the substrate comprises $Sr_zBa_{1-z}TiO_3$.

60. (New) The semiconductor structure of claim 44, wherein the amorphous oxide layer formed on the substrate comprises $Sr_zBa_{1-z}ZrO_3$.

61. (New) The semiconductor structure of claim 44, wherein the amorphous oxide layer formed on the substrate comprises $Sr_zBa_{1-z}HfO_3$.

62. (New) The semiconductor structure of claim 44, wherein the amorphous oxide layer formed on the substrate comprises $Sr_zBa_{1-z}SnO_3$.

63. (New) The semiconductor structure of claim 44, wherein the amorphous oxide layer formed on the substrate comprises $CaTiO_3$.